

Potential of Acetylcholine-induced Smooth Muscle Contraction in Rat Ileum by Lead

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Abstract

The aim of this study was to find out lead interaction on acetylcholine-induced ileal (0.8" to 1" longitudinal total strips) contractions in varying calcium (Ca⁺⁺) or magnesium (Mg⁺⁺) media and the cholinergic mechanism. Potentiation of ileal strips by lead (Pb⁺⁺) remained dose-dependent as elicited by acetylcholine-induced contractions (1.81 x 10⁻⁶ M to 1.28 x 10⁻⁴ M). These were completely antagonized by atropine (1.01 x 10⁻⁸ M). Lead (1.2 x 10⁻⁵ M) potentiated contractions caused by acetylcholine in normal or in excess Ca⁺⁺ media, but in low Ca⁺⁺ or with various Mg⁺⁺ media, lead failed to potentiate such contractions. Thus Pb⁺⁺ has indirect cholinomimetic effect which involved extracellular Ca⁺⁺

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Key words: Acetylcholine, Calcium, Ileal muscle, Lead, Magnesium, Rat

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